

Summary of *Salmonella* serotype Enteritidis Outbreaks Reported in 2000

State and local health departments reported 50 confirmed outbreaks of *Salmonella* serotype Enteritidis (SE) infection to CDC for calendar year 2000. These outbreaks resulted in 861 reported illnesses, 151 hospitalizations and 2 deaths among residents of 23 states (Table). Compared with 1999 data, there were 6 additional outbreaks, 88 additional hospitalizations, and 219 fewer illnesses in 2000. The median number of cases per outbreak was 6 in 2000, compared with 15 in 1999.

A suspected food vehicle was identified for 36 (72%) of 50 outbreaks; 15 of these were confirmed by culture or statistical association. Eggs were an ingredient in 12 (80%) of 15 confirmed vehicles, including ice cream, eggs or egg dishes, chile relleno, and macaroni and cheese. Among 21 outbreaks in which the suspected food item was not confirmed, 13 (62%) were associated with egg-containing dishes. Between 1993 and 1999, an average of 80% of vehicle-confirmed outbreaks have been egg-associated.

Thirty-five (70%) of the 50 outbreaks occurred in commercial food establishments (e.g., restaurants, delicatessens, bakeries, caterers), compared with 212 (59%) of 359 outbreaks occurring between 1993 and 1999. Six (12%) outbreaks occurred in nursing homes or long-term care facilities, and eight (16%) took place in the general community (e.g., private homes, day care facilities, community centers, religious meeting places). For comparison, 4% of outbreaks between 1993 and 1999 occurred in nursing homes or long-term care facilities and 8% took place in the general community.

Egg traceback investigations were conducted for 14 (50%) of 28 outbreaks in which the suspected or confirmed vehicle contained eggs. Eight (57%) of the traceback investigations identified a single farm as the likely source of implicated eggs, two (14%) identified multiple farms, two (14%) identified a distributor, and two (14%) were inconclusive. SE was isolated from the farm environment in four of eight instances where a single farm was identified. The phage type identified on these farms was not determined. Control measures following the isolation of SE from the farms included sanitation measures, depopulation of the flocks, and diversion and pasteurization of eggs. Eleven (79%) egg traceback investigations were conducted by state officials; three (21%) were conducted by FDA.

Phage typing was performed on patient isolates in 32 (64%) of outbreaks. SE phage type 8, which accounted for 28% of the reported outbreaks between 1993 and 1999, accounted for 10 (31%) of the 32 SE outbreaks in 2000. Seven SE phage type 8 outbreaks occurred in eastern states, and three occurred in Michigan and Ohio. An egg-containing food vehicle was suspected or confirmed in six (60%) SE phage type 8 outbreaks. Among the remaining outbreaks for which isolates were phage typed, seven (21%) were caused by phage type 13a, five (16%) by phage type 4, and three (9%) by phage type 13. Phage type 2, historically rare in the United States, was responsible for only one (3%) outbreak.

While the number of SE outbreaks reported for the New England and Mid-Atlantic states increased slightly from 9 in 1999 to 10 in 2000, the number is considerably lower than the 42 outbreaks reported in 1992. The number of SE outbreaks reported in the Mountain and Pacific states increased from three in 1992 to 22 in 1999; however, the number of outbreaks decreased again to 8 reported in 2000. Although the precise reason for the decrease in both regions is unclear, it may be a combination of increased participation in egg quality assurance programs on farms, improvements in egg preparation practices, and food handler education.

Salmonella serotype Enteritidis outbreaks reported to CDC, by Date of Illness Onset, January 1 - December 31, 2000

												Updated March 5, 2000	
CDC ID#	Onset Month	State	City or County	Cases (#)	Hosp (#)	Deaths (#)	Exposure Location	Suspected Vehicle	Vehicle	Vehicle Contain	Confirmed ? ¹	Shell Eggs?	Phage type of clinical Egg Traceback Done? ²
	isolates ³												
1	2	IL	Chicago	29	10	1	Catered party	Stuffed salmon	No	Yes	Y:FDA		13
2	2	MD	Baltimore	2	0	0	Restaurant	Crab cakes	No	Yes	N		34
3	2	PA	Allegheny	2	1	0	Private home	Unknown	No	-	N/A		-
4	3	CA	Multiple	67	2	0	Restaurant	Mung bean sprouts	Yes	No	N/A		33
		NV	Reno	2	0	0							
	4	OR	Ashland	3	1	0	School conference						
5	3	CO	Multiple	32	8	0	Community	Unpasteurized orange juice	Yes	No	N/A		Untypeable
		CA	Multiple	51	3	0							
		NV	Las Vegas	6	2	0							
		AZ	Multiple	3	2	0							
		WY	Laramie	2	0	0							
		WA	Seattle	1	0	0							
		ID		1	0	0							
		MN	Hennepin	4	0	0							
6	3	MA	Bristol	3	0	0	Restaurant	Unknown	No	-	N/A		13a
7	3	MI	Muskegon	11	2	0	Restaurant	Eggs	No	Yes	Y:Local		8
8	3	UT	Salt Lake City	12	1	0	Banquet	Unknown	No	-	N/A		4
9	4	OH	Cuyahoga	5	-	0	Restaurant	Unknown	No	-	N/A		8
10	4	VA	Alexandria	81	13	0	Recreation center	Macaroni and cheese	Yes	Yes	Y:Local		20 ⁴
11	5	ME	Sanford/York	3	1	0	Restaurant	Eggs	No	Yes	N		-
12	5	NY	Clinton	4	0	0	Restaurant	Unknown	No	-	N		-
13	5	OR	Portland/ Multomah	2	0	0	Daycare center	Unknown	No	-	N/A		-
14	5	PA	Adams	10	0	0	Private home	Homemade ice cream	Yes	Yes	Y:Local		8
15	6	GA	Metter	16	5	0	Community	Eggs	Yes	Yes	Y:Local		13
16	6	ID	Canyon	4	0	0	Restaurant	Barbecued beef tacos	No	No	N/A		-

17	6	KY	Boone	13	5	0	Restaurant	Unknown	No	-	N/A	13a
18	6	MD	Ocean City	15	1	0	Restaurant	Crab cakes	No	Yes	-	8
19	6	NJ	Monmouth	20	10	0	Nursing home	Eggs	No	Yes	Y:Local	13a
20	6	NV	Yerington	7	1	0	Long-term care facility	Food handler	No	-	N/A	-
21	6	PA	Bucks	3	0	0	Restaurant	Steamed eggs	No	Yes	-	-
22	6	SC	Myrtle Beach	43	-	-	Restaurant	Unknown	No	-	N/A	13, 8
23	7	ME	Kennebec	2	0	0	Restaurant	Eggs	No	Yes	N	-
24	7	NV	Lincoln	4	1	0	Restaurant	Taco salad / Mexican special	No	No	N/A	-
25	7	PA	Delaware	4	0	0	Restaurant	Multiple	Yes	No	N/A	RDNC
26	7	UT	Davis	25	2	0	Restaurant	Ham fried rice	Yes	Yes	N	4
27	7	VA	Fairfax	27	13	0	Nursing home	Unknown	No	-	N/A	8
28	7	WA	Klickitat	2	0	0	Restaurant	Chile rellenos	No	Yes	-	2
29	8	NV UT	Mesquite	37 13	5	0	Casino	Egg dishes	Yes	Yes	Y:FDA	4
30	8	OH	Licking	64	14	0	Restaurant	Soft serve ice cream	Yes	Yes	Y:Local	13a ⁴
31	8	OH	Portage	31	11	0	Restaurant	Egg dishes	No	Yes	Y:Local	13a
32	8	PA	Multiple	5	1	0	Private home	Homemade ice cream	Yes	Yes	Y:FDA	13a
33	8	PA	Northumberland	3	0	0	Nursing home	Unknown	No	-	N/A	-
34	8	UT	Salt Lake	4	2	0	Restaurant	Fruit platter	No	No	N/A	5a
35	8	VT	Lamoille County	5	1	0	Restaurant	Potato salad	No	Yes	-	8
36	9	CT	Litchfield	6	1	0	Restaurant	Unknown	-	-	N/A	-
37	9	MN	Invergrove Heights	16	1	0	Restaurant	Egg dishes	No	Yes	N	13a
38	9	NJ	Vineland	6	2	0	Nursing home	Pureed eggs	No	Yes	-	RDNC
39	9	NY	New York City	60	6	0	Catered meals	Gefilte fish	Yes	Yes	-	-
40	9	PA	York	7	0	0	Restaurant	Stuffed flounder	Yes	Yes	Y:Local	8

41	9	UT	Salt Lake	12	0	0	Restaurant	Fish tacos	Yes	Yes	Y:Local	4
42	10	CA	Orange	4	1	0	Restaurant	Meat lasagna	No	Yes	N	-
43	10	CA	Los Angeles	3	0	0	Wedding reception	Unknown	No	N/A	N	RDNC
44	10	NY	Rockland	3	0	0	Nursing home	Eggs	No	Yes	N	-
45	10	OH	Knox	6	1	0	Restaurant	Fried rice	No	Yes	N	8, RDNC
46	10	PA	Pike	25	9	0	Restaurant	Stuffed flounder	No	No	N/A	8
47	11	CA	Los Angeles	3	0	0	Private home	Unknown	No	N/A	N	4
48	11	MI	Multiple	18	6	1	Banquets	Macaroni salad	No	-	N/A	8, RDNC
49	12	CA	San Diego	4	0	0	Restaurant	Chile relleno	Yes	Yes	Y:Local	
50	12	NY	Bronx	5	6	0	Private home	Egg nog	Yes	Yes	Y: Local	-
Total	50			86	1	2						

"-" indicates missing or unknown data

¹ Based on reliable epidemiologic information, statistical implication, or SE isolation from remaining food samples

² Indication of egg traceback : Traceback done by FDA - Y:FDA, done State Agricultural Department - Y:Local, not applicable-N/A

³ RDNC = Reacted, but did not conform (various phage lysis patterns)

⁴ Resembles; one reaction different